FINANCIAL DETERMINANTS OF HOTEL PERFORMANCE

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ABSTRACT

Considering that tourism sector is very significant generator of revenues in Croatian economy it is widely explored in available researches and literature. Most commonly explored determinants of performance include category measured with number of stars, location, size measured by number of beds and quality of service. However, given that author's practical experience is more focused on financial analysis, this paper aims to investigate which financial aspects of the hotel operations influence its performance. The pocus of this paper is to explore which financial determinants influence hotel performance.

For the purpose of this paper performance is measured with return on assets (ROA), return on equity (ROE) and net margin (NM). The paper investigates influence of 4 variables on the performance: size on the basis of revenue, leverage, coverage ratio I and coverage ratio II. Based on the practical experience and literature review he author expects that leverage would be most significant among chosen variables. The sample covered by the analysis comprises of 40 largest hotel companies in Croatia. While scoping the sample size is measured by revenues realized in year 2016. Data was statistically analysed using regression and the results show that in fact leverage is the most significant variable and that it is negatively correlated with performance measured with net margin. This means that higher leverage will bring lower net margin as it expected. On the other hand, statistical analysis also showed that explored independent variables didn't have statistically significant influence on performance measured by return on assets (ROA) and that only coverage ratio has significant influence on performance measured by return on equity (ROE).

KEYWORDS: hotel performance, net margin, ROA, ROE.

INTRODUCTION:

Tourism sector is very significant revenues generator in Croatian economy. According to the publicly available information issued by Ministry of tourism in 2016 revenues from tourism participated with 18,9% in total GDP. This is an increase of 0,7% in relation to the year 2015. Tourism is growing industry in the last 10 years in Croatia. In the last 10 years Croatia records growth of capacities along with significant growth of number of stays and number of tourists.

Entire available capacities include hotels, private rooms and apartments, camps, hostels etc. in the structure of these capacities 12,1% refers to hotels. Regarding hotels category, expressed as a number of stars, there is large variety of hotels. In total staying capacity of hotels in 2016, 9% refers to 5 stars hotels, 44% refers to 4 stars hotels, 36% refers to 3 stars hotels and 11% refers to 2 stars hotels.

It is widely explored in available researches and literature how category measured with number of stars, influence performance. However, given that author's practical experience is more focused on financial analysis, this paper aims to investigate which financial aspects of the hotel operations influence its performance.

The rest of the paper is structured as follows. After the introduction, review of the literature dealing with this issue follows. Description of variables is given in section three, while section four describes methodology and empirical findings. The paper concludes with concluding remarks.

LITERATURE REVIEW:

Moaveni (2014) investigated the effect of internal, external and macroeconomic factors on the profitability of tourism industry considering the five large Turkish tourist companies from 1998 to 2011. The author explored influence of internal variables: equity over total asset ratio, cost-income ratio and logarithm of size. Additionally, the author states that effective tax rate and real GDP growth appeared as the indicators for the change in economic situation and external factors. The author measured profitability by return on average asset (ROAA) ratio and return on average equity (ROAE) ratio. This paper concluded that results of regression analysis, show that the internal factors are more related to profitability than the other variables. The author states that capital adequacy and logarithm of size have a significant impact on ROAA and ROAE. The author also concludes that the profitability and financial performance of tourism industry is not affected significantly by the macroeconomic factors.

Alarcon Aznar and Maspera Sayeras (2015) analysed the differences in financial structure, size and profitability of hotels located in three main Spanish coastal areas: Costa Brava, Costa Dorada and Costa del Sol. Their study focused on finding key differences in hotels' performance using analysis of financial statements on the sample of 100 hotels. They conclude that size of the hotels, measured either by number of rooms per hotel or by otal assets was found to be larger in Costa del Sol, with hotels being around 6 times bigger than those located in Costa Brava. The Costa del Sol hotels have higher debt ratios as a result of the larger investment made, with these higher ratios leading to a risk premium in the inter-

est rates, making debt more expensive for them. The returns on investment measure shows better performance for hotels located in Costa Dorada. Also, authors state that the market structure of the hotels in Costa del Sol shows the existence of exit barriers, with the companies experiencing negative returns for several years still choosing to operate, due to the difficulty of selling their specific assets at the prices their shareholders would accept.

Pejković (2017) explored operational excellence of hotel companies in Croatia. The work shows that there is positive correlation between profit margin, operating margin and net profit margin with sales revenues so it is concluded that the size of the hotel company is relevant for increase of these ratios. Indicator Return on assets (ROA) is positively correlated with size measured by total assets and with number of employees. Also, the research shows that current assets turnover ratio and leverage have positive correlation with size measured by total assets and sales revenues. Further on, the research shows that fixed assets turnover ratio and current liquidity have positive correlation only with number of employees. Overall conclusion is that size of the hotel company influence operational excellence, although not significantly.

Bresciani, Thrassou and Vrontis (2015) in their paper Determinants of performance in the hotel industry – an empirical analysis of Italy explored 3 hypotheses: a positive correlation exists between hotel dimension and performance, a positive correlation exists between the stars-rating (and therefore quality) and performance and a positive correlation exists between the service provided and performance. They conclude that category, represented in number of stars, is the only determinant of hotel performance among those investigated and that its correlation with performance is positive.

Santoro (2014) in his paper Evaluating performance in the hotel industry: an empirical analysis of Piedmont, explored whether variables stars rating, dimension and added services provided are correlated to performance, measured by Rev Par (revenue per available room). Their research showed that all mentioned variables affect the performance, measured by the RevPar index, but in a different way. The author concludes that there is a significant and positive correlation between the performance and the category (stars), that there is a significant and positive correlation between hotel dimension and performance and between services provided and performance but with weaker correlation.

Selection of Variables:

For the purpose of this paper the author measured performance with net margin, return on assets (ROA) and return on equity (ROE).

ROA is calculated as net result divided by average total assets of a bank, presented in percentage. ROE is calculated as net result divided by average total equity, also presented in percentage. Net margin variable is calculated as net result divided by total revenues am dot is usually presented as percentage.

Based on practical experience in financial analysis of hotel industry and after exploring available literature the author chose to explore impact of following

variables on performance.

Variable size of the hotel company is measured by total operating revenues. It is expected that this variable will have positive correlation with performance.

Leverage variable is calculated as average total liabilities (debts) divided by sum of net result and depreciation and amortization. Higher leverage ratio indicates higher indebtedness and higher risk, therefore it is expected that this variable will have negative correlation with performance.

Coverage ratio I is calculated as sum of equity and reserves divided by fixed assets. It is expected that this variable with have positive influence given that higher ratio indicates that larger portion of fixed assets is financed with equity and reserves.

Coverage ratio II is calculated as sum of equity, reserves and long term liabilities divided by fixed assets. It is expected that this variable with have positive influence given that higher ratio indicates that term structure of the balance sheet is adequate, i.e. fixed assets are financed with long term sources.

METHODOLOGY AND EMPIRICAL FINDINGS:

The sample covered by the analysis comprises of 40 largest hotel companies in Croatia. While scoping the sample size is measured by revenues realized in year 2016.

Descriptive statistics for all variables is shown in Table 1.

Table 1: Descriptive statistics

	Mean	Std. Deviation	N
Net margin	0,154791	0,166526	39
Ln(size)	18,85577	0,741516	39
Leverage	10,96897	20,3246	39
Coverage ratio II	1,011026	0,293677	39
Equity ratio	0,528462	0,335462	39
Coverage ratio I	0,625128	0,428221	39
ROE	0,065395	0,340006	39
ROA	0,077621	0,1359	39

Source: author

Due to high amount of variable "size" logarithm is applied.

Before conducting regression analysis, collinearity among the independent variables has been checked to eliminate possible multicollinearity.

Table 2: Correlation Matrix

		Ln(size)	Leverage	Coverage ratio II	Coverage ratio I	Equity ratio
Ln(size)	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	39				
Leverage	Pearson Correlation	-0,026	1			
	Sig. (2-tailed)	0,874				
	N	39	39			
Coverage ratio II	Pearson Correlation	0,008	-0,15	1		
	Sig. (2-tailed)	0,959	0,363			
	N	39	39	39		
Coverage ratio I	Pearson Correlation	0,156	-0,266	,704**	1	
	Sig. (2-tailed)	0,344	0,102	0		
	N	39	39	39	39	
Equity ratio	Pearson Correlation	0,196	-0,241	,418**	,919**	1
	Sig. (2-tailed)	0,233	0,139	0,008	0	
	N	39	39	39	39	39

*** Correlation is significant at the 0.01 level (2-tailed)*

Source: author

As expected, Matrix of Pearson Correlation has shown that there is high correlation between variables coverage ratio I and equity ratio as shown in Table 2. Considering that variable coverage ratio I also correlates with coverage ratio II it is eliminated from the model.

Coefficients of the regression models with ROA as dependent variables show that there is a problem of heteroscedasticity, therefore the model is not adequate.

Table 3: Coefficients of the regression models – ROA

```
  Source |       SS         df       MS              Number of obs =      39
---------+------------------------------             F(  4,    34) =    4.90
   Model | .253916169        4   .063479042          Prob > F      =  0.0031
Residual | .440073562       34   .01294334           R-squared     =  0.3659
---------+------------------------------             Adj R-squared =  0.2913
   Total | .693989731       38   .018262888          Root MSE      =  .11377

-------------------------------------------------------------------------------
     roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+---------------------------------------------------------------------
  lnsize |   .0126098   .0254712     0.50   0.624    -.0391539     .0643734
leverage |  -.0023384   .0009373    -2.49   0.018    -.0042432    -.0004337
coverager~ii | .2105494  .0695109    3.03   0.005     .0692863     .3518126
equityratio | -.2168921 .0631995    -3.43   0.002    -.3453289    -.0884552
   _cons |  -.2331807   .4837295    -0.48   0.633    -1.216237     .7498759
-------------------------------------------------------------------------------
```

Source: author

Table 4: Test for heteroscedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
       Ho: Constant variance
       Variables: fitted values of roa

       chi2(1)      =     18.56
       Prob > chi2  =    0.0000
```

Source: author

The cause of heteroscedasticity is equity ratio so it is eliminated from the model as shown in the table 5.

Table 5. Coefficients of the Regression Model after elimination of equity ratio - ROA

```
  Source |       SS         df       MS              Number of obs =      39
---------+------------------------------             F(  3,    35) =    2.00
   Model | .101473614        3   .033824538          Prob > F      =  0.1322
Residual | .592516117       35   .016929032          R-squared     =  0.1462
---------+------------------------------             Adj R-squared =  0.0730
   Total | .693989731       38   .018262888          Root MSE      =  .13011

-------------------------------------------------------------------------------
     roa |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+---------------------------------------------------------------------
  lnsize |  -.0057276   .0284819    -0.20   0.842    -.0635489     .0520938
coverager~ii | .1139796  .072691    1.57   0.126    -.033591      .2615503
leverage |  -.0017009   .0010506    -1.62   0.114    -.0038338     .000432
   _cons |   .0885942   .5427253     0.16   0.871    -1.013197    1.190385
-------------------------------------------------------------------------------
```

Source: author

Statistical analysis show that model is not statistically significant and that independent variables don't have significant influence on performance measured by ROA.

Coefficients of the regression models with ROE as dependent variables show that there is also problem of heteroscedasticity, therefore the model is not adequate.

Table 6: Coefficients of the regression models – ROE

```
  Source |       SS         df       MS              Number of obs =      39
---------+------------------------------             F(  4,    34) =    2.03
   Model | .842942303        4   .210735576          Prob > F      =  0.1128
Residual | 3.53703197       34   .104030352          R-squared     =  0.1925
---------+------------------------------             Adj R-squared =  0.0974
   Total | 4.37997427       38   .115262481          Root MSE      =  .32254

-------------------------------------------------------------------------------
     roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+---------------------------------------------------------------------
  lnsize |   .0780967   .0722114     1.08   0.287    -.0686545     .2248479
leverage |  -.0018378   .0026571    -0.69   0.494    -.0072378     .0035621
coverager~ii | .2330549  .1970651    1.18   0.245    -.1674295     .6335393
equityratio | .2095421  .1791722    1.17   0.250    -.1545796     .5736638
   _cons |  -1.733596   1.371385    -1.26   0.215    -4.520586    1.053394
-------------------------------------------------------------------------------
```

Source: author

Table 7: Test for heteroscedasticity

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
       Ho: Constant variance
       Variables: fitted values of roe

       chi2(1)      =      5.78
       Prob > chi2  =    0.0163
```

Source: author

The cause of heteroscedasticity is equity ratio so it is eliminated from the model as shown in the table 8.

Table 8: Coefficients of the Regression Model after elimination of equity ratio - ROE

```
   Source |       SS       df       MS              Number of obs =      39
----------+------------------------------          F( 3,    35) =    2.22
    Model | .700656492      3   .233552164          Prob > F      =  0.1029
 Residual | 3.67931778     35   .105123365          R-squared     =  0.1600
----------+------------------------------          Adj R-squared =  0.0880
    Total | 4.37997427     38   .115262481          Root MSE      =  .32423

      roe |    Coef.   Std. Err.     t    P>|t|                     Beta
----------+------------------------------------------------------------
   lnsize | .0958127   .0709746    1.35   0.186                  .2092055
 leverage | -.0024538  .0026181   -0.94   0.355                 -.1468973
coverager~ii| .3263522   .18114     1.80   0.080                  .2823012
    _cons | -2.044467  1.352426   -1.51   0.140                        .
```

Source: author

Statistical analysis show that only variable coverage ratio II has statistically significant and positive influence on performance measured by ROE.

However, F value of 2,22 points to the conclusion that model in general is not statistically significant.

Coefficients of the regression models with net margin as dependent variables show that there is no heteroscedasticity problem.

Table 9: Test for heteroscedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
     Ho: Constant variance
     Variables: fitted values of netmargin

     chi2(1)    =      0.09
     Prob > chi2 =    0.7650
```

Source: author

Table 10: Coefficients of the regression models – net margin

```
   Source |       SS       df       MS              Number of obs =      39
----------+------------------------------          F( 4,    34) =    7.32
    Model | .4851733       4   .121293325          Prob > F      =  0.0002
 Residual | .563601071    34   .016576502          R-squared     =  0.4626
----------+------------------------------          Adj R-squared =  0.3994
    Total | 1.04877437    38   .027599326          Root MSE      =  .12875

 netmargin|    Coef.   Std. Err.     t    P>|t|                     Beta
----------+------------------------------------------------------------
   lnsize | .0323521   .0288252    1.12   0.270                  .1443602
 leverage | -.0051052  .0010607   -4.81   0.000                 -.6245725
coverager~ii| .1403343   .078664    1.78   0.083                  .248076
equityratio| -.2069901  .0715216   -2.89   0.007                 -.4179679
    _cons | -.4313718  .5474265   -0.79   0.436                        .
```

Source: author

Statistical analysis show that variables leverage and equity ratio have significant and negative influence. As the table 10 shows leverage has most significant influence.

Model in general interprets 46,26% square sums deviation from net margin.

F value of 7,32 points to the conclusion that model is statistically significant.

The model doesn't have multicollinearity problem.

Table 11: Test for multicollinearity

```
   Variable |      VIF       1/VIF
------------+----------------------
equityratio |     1.32     0.757792
coverager~ii|     1.22     0.817366
   leverage |     1.07     0.938645
     lnsize |     1.05     0.955382
------------+----------------------
   Mean VIF |     1.16
```

Source: author

CONCLUSION:
This paper researched which determinants influence performance of the hotel companies in Croatia. For the purpose of the paper performance is measured by return on assets (ROA), return on equity (ROE) and by net margin. Independent variables tested in all three models were size (measured by revenues), leverage, equity ratio, coverage ratio I and coverage ratio II. Research was done on the sample of 40 largest hotel companies in Croatia measured by operating revenue. Statistical analysis showed that selected variables had no significant influence on model where performance was measured by ROA and that model in general was not significant. It also showed that only variable coverage ratio II has significant influence on ROE. However, statistical analysis shows that both leverage and equity ratio have negative and significant correlation with performance measured by net margin.

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